12-5-2011

Creating a Healing Environment in the Intensive Care Unit

Elissa Egbers
Augsburg College

Creating a Healing Environment in the Intensive Care Unit

Elissa Egbers

Submitted in partial fulfillment of the
requirements for the degree of
Master of Arts in Nursing

AUGSBURG COLLEGE
MINNEAPOLIS, MINNESOTA
2011

Abstract

The intensive care unit (ICU) can be a very stressful environment. Patients are critically ill and require constant monitoring. Indeed, high tech care in the ICU environment includes multiple factors that may impair the patient's ability to sleep and rest. The purpose of this paper is to describe a practice model that is conducive to patient healing in an intensive care unit in a large urban hospital. This practice model is significant to patients, families, and nursing staff and is based on Florence Nightingale's Environmental Model of Nursing and her thirteen canons. This paper describes the potential implementation of the practice model, evaluation, and recommendations for the model.

Augsburg College
Department of Nursing
Master of Arts in Nursing Program
Thesis or Graduate Project Approval Form

This is to certify that **Elissa Egbers** has successfully defended her Graduate Project entitled **"Creating a Healing Environment in the Intensive Care Unit"** and fulfilled the requirements for the Master of Arts in Nursing degree.

Date of Oral defense **December 5, 2011**.

Committee member signatures:

Advisor: Cheryl Cushing Date Dec 5, 2011

Reader 1: Susan K Nash Date Dec. 5, 2011

Reader 2: Jodi Hellickson Date Dec 5, 2011

Acknowledgements

I would like to thank Dr. Cheryl Leuning, Dr. Katherine Baumgartner, and Dr. Sue Nash for their support, encouragement, and guidance over this last year. I would also like to thank my parents for being so supportive through this journey. Words cannot describe how amazing these two people are. I am so very lucky to have parents who love me so much and would do anything for me. Their support and love through this process has been tremendous. I would also like to thank my boyfriend, Justin, whose encouragement, support, and love have allowed me to complete this thesis. Words alone cannot express my gratitude to him. Finally, I am thankful to God who makes all things possible.

Table of Contents

Creating a Healing Environment in the Intensive Care Unit

The intensive care unit (ICU) can be a very stressful environment. Patients are critically ill and require constant monitoring. Indeed, high tech care in the ICU environment includes multiple factors that may impair the patient's ability to sleep and rest. Around the clock lab work, life-saving procedures, vital signs, medication administration, repositioning, plus myriad other activities can cause over stimulation for patients that lead to rest and sleep deprivation. Furthermore, loud noises from ventilator alarms, electrocardiogram monitoring, suction equipment, dialysis machines and cooling/warming blankets add to the cacophony of sounds. Harsh jarring sounds are also created from nurses and others picking up trash and linen in patient's rooms, from telephones ringing at the nurses' stations, and from staff conversing. The bright fluorescent lighting in patients' rooms adds another layer of irritation to the environment. This lighting is needed for lab work and procedures that occur in the room. However, the reality is that these lights are on almost 24 hours a day. Also, it seems that patient encounters with nursing staff, physicians, ancillary staff, and families happen constantly. Despite the significant challenges of the ICU environment, the professional nurse can play a central role in creating a more restful and healing environment for patients. Sleep and rest time for the patient in the ICU is often the last thing on a nurse's mind even though it may be one of the most crucial components for healing. Lack of sleep can lead to complications such as delirium and psychosis which can have detrimental effects on the patient who is trying to recover from their health (Patel, Chipman, Carlin, & Shade, 2008).

Sleep is a basic human need and assists the body to fight illness and infections as well as maintaining the body's homeostasis. However, within ICU environments, patients are rarely left alone for more than an hour at a time and often their sleep is much lighter than a healthy individual who can achieve rapid eye movement (REM) sleep (Dines-Kalinowski, 2002). Rapid eye movement sleep described in two articles state, "REM sleep is characterized by an active brain activity with absent muscle activity and is the stage where most dreaming is believed to take place" (Akerstedt, 2003; Patel et al., 2008, p. 309). REM sleep, in the average adult, comprises 20% of total sleep (Honkus, 2003; Parker, 1995; Landis, 1988). Dines-Kalinowski (2002) notes that "as many as 56% of patients are sleep deprived by the end of their first day in the hospital and sleep is especially hard to come by in the ICU thanks to frequent treatments and continuous monitoring" (p. 32). Studies confirm that in the ICU patients rarely get REM sleep. Indeed, roughly 3% to 4% of total sleep is REM sleep (Culpepper, 1988; Deamer & Kales, 1972; Honkus, 2003; Lee, 1997). Nurses can advocate for their patients for the importance of sleep in the ICU and work to create a more restful healing environment on the unit.

Purpose of the Project

The purpose of this project is to create a nursing practice model that fosters a healing environment for patients in the intensive care unit (ICU) of a large urban hospital. This project is based on Florence Nightingale's thirteen canons central to the Environmental Model of Nursing (Nightingale, 1992). Intentional and systematic implementation of Nightingale's canons leads to uninterrupted periods of sleep/rest and comfort for persons admitted to the ICU. This project will be supported by a review of relevant literature, the development of a practice model, which incorporates Florence Nightingale's theory, a discussion and plans for evaluation of the practice model, and finally conclusions, recommendations, and reflections.

Significance of Project

This practice model is significant to patients, families, and nursing staff because it will create an environment conducive to healing. The nursing literature gives ample insights into the dangers/risks of sleep deprivation for the hospital patients. Sleep deprivation can cause confusion, agitation, restlessness, and hallucinations (McGonigal, 1986). Often times patients will try to climb out of bed, pull out intravenous (IV) lines, or other invasive therapeutic equipment. Sleep deprivation can also lead to psychosis. Psychosis can be caused by a variety of factors, which may include: noise, sensory overload, stress, and sleep deprivation. "Studies have shown positive correlation between sleep deprivation and mental status changes in the ICU" (Patel et al., 2008, p. 312). By implementing a nursing practice model, which focuses on intentional creation of a healing environment in the ICU, patients may have the opportunity for uninterrupted quiet times to promote sleep, rest, and healing through implementation of rest hours on an intensive care unit.

This practice model has important implications for family members. Often nurses lose sight of the needs of family members. It is important to remember families are also dealing with the physical and emotional stress of having a loved one in the ICU. The establishment of quiet hours in the ICU environment may help patients heal more quickly which will be beneficial to family members. The quiet hours could have the added benefit of giving the family a rest period. Knowing their loved one is resting will allow the family to relax, go for a walk to relieve stress, or rest. Family members often forget to take care of themselves by not eating or drinking. The quiet hours would allow them time for lunch to fuel their bodies. Further, quiet hours may ease the nerves of family members who do not want to leave the unit for fear of missing the doctors. If the family is in the waiting room the doctor could speak with them there instead of in the patient's room. Having a scheduled rest time each day could potentially decrease the length of

stay in the ICU for patients, decrease costs to patients and families, decrease stress on families, and increase healing time for patients.

In addition, this practice model is significant to nursing. Through use of Nightingale's (1992) thirteen canons nurses have a theory-based framework to create a restful environment for the patient. The nurses, at the bedside, are able to create this healing environment by intentionally manipulating the environment. Managing factors, which interfere with healing of the whole person and not just the disease, is crucial. Established quiet hours may allow the nurse to be more efficient and effective in patient care and critical thinking. Moreover, rest hours will be valuable to nursing staff as it may curtail burnout and stress nurses have when dealing with patients who are confused or agitated and suffering from delirium or psychosis. A more restful environment will hopefully improve periods of sleep for the patient. Moreover, nurses perhaps will not have to deal with confused, agitated patients who may harm themselves or others and may require interventions such as restraints or sedating medications to calm the patient who is confused from sleep deprivation. A more restful environment may improve patient outcomes and safety through increased sleep/rest cycles and decreased agitation and confusion.

In addition to the above noted potential benefits from a practice model, periodic quiet hours in the ICU may be favorable to all members of the allied health team. Ancillary staff will be informed about scheduled quiet time so they will be able to coordinate their therapies before or after the established quiet times. Nurses will be able to focus their attention on other activities such as reviewing orders, coordination of care, and facilitating different health services involved in patient care. Even if the patient needs to be watched closely during quiet hours, the nurse will be able to observe the patient through central monitoring systems and not be inside the room allowing rest for the patient.

Lastly, the new practice model has the potential to contribute to nursing knowledge and practice. Through implementation and evaluation of quiet times this evidence-based practice may be used on other units throughout the hospital to aid in healing. Nurses need to focus on creating a healing environment for the whole patient and not place all their attention in the care of the disease. The health inequity that will be addressed by this new practice model is ineffective healing related to sleep deprivation. Effects of sleep deprivation related to healing will be discussed in depth through the literature review in chapter two.

Description of Nursing Theory

Florence Nightingale's Environmental Model of Nursing will be used to guide this project. Her model is focused on her thirteen canons, which include the following (Nightingale, 1992):

1. Ventilation and warming
2. Health of houses
3. Petty management
4. Noise
5. Variety
6. Taking food
7. What food?
8. Bed and bedding
9. Light
10. Cleanliness of room and walls
11. Personal cleanliness
12 Chattering of hopes and advices
13. Observation of the sick

These thirteen canons can guide the nurse to intentionally and systematically create an environment conducive to healing. "The general definition of environment is anything that, through manipulation, assists in putting the individual in the best possible condition for nature to act. Therefore, the environment has internal and external components" (Selanders, 2010, p. 84).

Fitzpatrick (1992) stated, "To Nightingale environment is central. It serves as a key factor in preventing diseases and in restoring health when disease has occurred" (p. 20).

The first canon, *ventilation and warming*, suggests that the nurse would be able to manipulate the environment by keeping the room free of toxic air and unnecessary aromas. Also, the nurse can change the environment through temperature control and ventilation to provide comfort for the patient. Nightingale (1992) believed that the air quality and temperature of a room were "the first and the last thing upon which a nurse's attention must be fixed" because without attending to air quality and temperature "all the rest you can do for [the patient] is as nothing" (p.8). Nightingale (1992) states another important nursing intervention is "...to keep the air [the patient] breathes as pure as the external air, without chilling him" (p. 14). This is an intervention nurses can do daily. While nurses in the ICU are hopefully not dealing with gas fumes, "mustiness from underground kitchens, washhouses and open sewers are loaded with filth" (p.8) as in Nightingale's day, there are no doubt several noxious and even toxic fumes floating through hospital corridors and ICU's. How nurses attend to the air quality and temperature in an ICU can make a huge impact on the health and healing outcomes for their patients.

The second canon, *health of houses*, describes five factors, which include: pure air, pure water, efficient drainage, cleanliness, and light can secure a health of houses (Nightingale, 1992). While an ICU is not a house, several principles related to the care and cleanliness of a house are relevant to the care and cleanliness of an ICU. Nightingale (1992) notes, "A dark house is always an unhealthy house, always an ill-aired house, always a dirty house" (p. 16). She also has advice for those in leadership positions within a house, which can be translated to leadership within a unit. She states, "...if you, who are in charge, don't look to all these things yourself, do you imagine that those under you will be more careful than you are?" (p. 17). She goes on to say,

"This is what being in charge means, and a very important meaning it is, too. The former only implies that just what you can do with your own hands is done. The latter that what ought to be done is always done (p. 17). Nursing care focused on these components of health of houses within a unit can potentially create a healing environment.

The third canon, *petty management*, describes continuity of care when the nurse is not visible. Nightingale (1992) states, "by knowing how to manage that what you do when you are there, shall be done when you are not there" (p. 20). It is important for all nurses on the unit to practice with intention and collaborates with other members of ancillary staff to create an environment conducive for healing.

The fourth canon is *noise*. "Unnecessary noise, or noise that creates an expectation in the mind, is that which hurts the patient" (Nightingale, 1992, p. 25). Noise must be kept to a minimum and staff needs to be cognizant when they have conversations near patient rooms. Noise can be created from a variety of places and the nurse needs to be aware of unnecessary noise.

The fifth canon, *variety*, suggests creating an environment through color, lighting, and form. "Variety of form and brilliancy of colour in the objects presented to patients are actual means of recovery" (Nightingale, 1992. p. 34). Cards, pictures, drawings, and balloons etc. are all ways to create variety in a patient's room.

The sixth and seventh canons are *taking food* and *what food*? These two canons focus on nutrition and their importance for healing. The eighth canon is *bed and bedding*. This canon is based on providing comfort to the patient. This is done through changing linens, keeping linens dry and keeping wrinkles out of bedding.

The ninth and tenth canons focus on environment in and around patient's rooms. The ninth canon is *light*. Nightingale (1992) states, "The cheerfulness of a room, the usefulness of

light in treating disease is all important" (p. 48). Lighting can play a crucial role in patient healing. The tenth canon is cleanliness of room and walls. "Without cleanliness, you cannot have all the effect of ventilation; without ventilation, you can have no thorough cleanliness" (p. 52). This quote shows that all of Nightingale's canons are interrelated.

Personal cleanliness is the eleventh canon. Nightingale (1992) states, "The amount of relief and comfort experienced by the sick after the skin has been carefully washed and dried, is one of the most commonest observations made at the sick bed" (p. 53). The canon provides promotes comfort, rest, and healing.

The twelfth canon is *chattering hopes and advice*. This canon describes friends and family trying to continually cheer up the patient. These family members are well meaning but do not realize the implications it may have in healing for the patient. Nightingale (1992) states, "I would appeal to friends, visitors, and attendants of the sick to leave off this practice of attempting to "cheer" this sick by making light of their danger and by exaggerating their probabilities of recovery" (p. 54). Limiting this type of stimulation could promote healing.

The final canon is *observation of the sick*. "For it may safely be said, not that the habit of ready and correct observation will by itself make us useful nurses, but that without it we shall be useless with all our devotion" (Nightingale, 1992, p. 63). It is imperative that nurses be observant of the environment patients are in. This observation could lead to intentional and systematic implementation of sleep/rest and promotion of comfort.

Nightingale's theory is patient centered and she firmly believed the environment could be changed to create healing. Selanders (2010) notes, "The goal of nursing is to put the patient in the best possible condition for nature to act" (p. 86). This quote means nurses are able to change the environment in order to aid in patient healing. One dimension of a healing environment is noise reduction. Nightingale (1992) wrote, "Unnecessary noise, or noise that creates an

expectation in the mind, is that which hurts the patient" (p. 25). Furthermore, she goes on to say, "Unnecessary noise injures a sick person much more than necessary noise" (p. 27). Through manipulation of noise, lighting, and other external factors the nurse is able create an environment for healing. "Her admonition to nurses both, those providing care in the home and trained nurses in hospitals was to create a therapeutic environment that would enhance the comfort and recovery of the patient" (Butts & Rich, 2004, p. 78).

Summary

This project will attempt to create a healing environment for patients in the ICU by implementation of rest hours on an ICU unit. Utilizing Florence Nightingale's (1992) Environmental Adaptation Theory, this practice model seeks to promote a restful environment, which may assist patients in their healing process. Chapter two will identify the literature that supports the project and why it is important to nursing practice and patient care.

Chapter Two

Review of Relevant Literature

The purpose of this literature review is to reflect on the importance of sleep for patients in an intensive care in the process of healing, how sleep deprivation can have detrimental effects on patient healing, and how the environment within an ICU impacts healing. Key words used in the search were critical care, intensive care unit, sleep deprivation, sleep, noise, healing, and healing environment.

Freedman, Gazendam, Levan, Pack, & Schwab (2001) studied wake/sleep cycles in the intensive care unit and the effect of environmental noise on sleep. Twenty-two mechanically ventilated patients were studied with continuous polysomnography and measured environmental noise on sleep disruption. All the patients in the study had sleep/wake abnormalities with decreased or absent REM sleep. However, it was concluded sleep/wake abnormalities is multi-factorial and although environmental noise contributed to these abnormalities the data suggested that other causes must contribute to sleep disruption. While this study makes valid points, it was a very small study and did not indicate what kind of environmental noise caused sleep disruption.

Sleep is an important component to healing in the ICU. Tembo and Parker (2009) studied factors that contribute to sleep deprivation in ICU's through a meta-analysis of articles published since 2000. Tembo and Parker (2009) found twenty-two articles that discussed environmental factors in ICU's, which effected sleep. One study focused on noise. Noise initiated a sequence of physiological changes including vasoconstriction, raised diastolic blood pressure, pupil dilatation, and muscle tension (Honkus, 2003). Freedman et al., (2001) conducted a study using polysomnography to measure noise in the environment. This study measured noise for 24-48 hours in 22 patients. The results showed noise was accountable for 11-17% of awakenings from sleep. This study only used two ICU's and had a small sample size. In order to get a better idea

of sleep deprivation from the environment a larger study is recommended. Tembo and Parker (2009) reviewed another study, which was observational, by Tamburri et al., (2004) and looked at nurse interactions with patients during the night over 147 nights. It included four ICU's and fifty patient records. Results of the study found most interactions occurred around midnight with the fewest at three in the morning. Nine patients had interactions that lasted 2-3 hours. The difficulty with this study is that it was only observational and patients/nurses were not interviewed. Furthermore, since it was observational we cannot know if patients would report quality sleep. While this article had many great examples of environmental factors that affect sleep, it did not make recommendations to create a quiet time each day for patients.

Friese (2008) reported the negative effects of sleep deprivation. It is perceived that sleep affects the immune response however it is hard to understand the correlation between the two. Two studies reviewed sleep deprivation between animal and human models. In animal models chronic deprivation of sleep can cause cachexia and septicemia. In human models all studies occurred on healthy individuals. Friese (2008) goes on to stress the importance of comfort and sleep in the ICU. This can occur through changes in lighting, noise reduction, pharmacologic agents, and patient care interventions. Friese noted studies looking at the relationship between quantity and quality of sleep are recommended.

Patel et al., (2008) studied the importance of sleep and suggested it is crucial for survival. This study discussed the effects of sleep in critical care and how to treat patients with critical illness. Patients in ICU experience bright lights, noise, and stimulation. A study discussed in the article by Freedman et al., (2001) looked at noise levels. They found levels were higher than Environmental Protection Agency (EPA) recommendations both during the day and night. Bright lights disrupt circadian rhythms and affect melatonin, which disrupts sleep. Changes in heart rate, blood pressure, and temperature have also occurred with sleep deprivation (2008). Sleep

deprivation also affected mental status and caused agitation, restlessness, and irritability. Ways to reduce sleep deprivation included changes in environment such as lighting, noise from machines/people, decrease stimulation to patients, limit sedating medications, control pain to improve quality of sleep. This article suggested the need for quiet hours in an ICU to reduce sleep deprivation.

Honkus (2003) described sleep deprivation and discussed stages of sleep wake patterns and why nurses need to be more mindful of these patterns. The article described causes of sleep deprivation, which are congruent to the causes discussed in Patel et al., (2008) article. Honkus focused on challenges for nursing. First, was the challenge of sleep knowledge deficit. Many studies discuss the importance of sleep in the ICU but in spite of documented evidence in the literature it is still overlooked in many hospital settings. There is a lack of education about the benefits of sleep and how the sleep process works. Further, the article discussed a study completed by Freedman, Kotzer, and Schwab (1999) in four ICU's, 203 patients were given a survey on discharge to evaluate their sleep while in the ICU. Questions were asked based on perceived sleep quality and disruption caused by environmental factors. It was found that lighting and noise were not as bothersome as obtaining vital signs and early morning lab draws. This is an interesting finding and would be helpful to know the average length of stay in this survey because that can contribute considerably to sleep deprivation. The article discussed a study by Olson, Borel, Laskowitz, Moore, & McConnell (2001) that described nursing perceptions of sleep. Many nurses stated they knew the importance of sleep but found it hard to organize daily tasks and assessments to accommodate a two-hour period of rest (2001). Finally, the study discussed how to overcome nurses' challenges to providing sleep. Education on sleep is an important component to help overcome sleep deprivation. Nurses need education on sleep

and sleep deprivation. This background of knowledge can occur through continuing education and during critical care orientation.

Dines-Kalinowski's (2002) article discussed the signs and symptoms of sleep deprivation. Confusion, agitation, irritability, and restlessness are some factors and can fluctuate with age and environment. As a nurse if you recognize these symptoms early you can help change the process and start to restore sleep. A nurse can promote sleep by controlling pain, modifying the environment, promoting comfort, promoting psychological well being, and establishing consistent patterns of sleep and rest. This article appears to have meaningful insights to include in a nursing practice model for the ICU.

Parker (1995) reviewed the stages and functions of sleep. There are many barriers to sleep and rest for the critically ill and they include several factors that have been discussed in the other articles as well. They include: pain, discomfort, environment, age, anxiety, medications, and noise. Nursing interventions and actions causes many of these stressors. It is important for the nurse to address these stressors and provide an ideal sleep environment that promotes healing. Through continued research nurses can examine and identify nursing interventions that will help promote sleep.

McCarthy, Ouimet, and Dawn (1991) researched noise stress on wound healing and how manipulating the environment as Florence Nightingale suggested can lead to better patient outcomes. Environmental noise may have a great impact on patient recovery and the healing of wounds. The article reviewed the psychobiology of the stress response. In human beings, 70% of the growth hormone is secreted during periods of deep sleep, and secretion is inhibited when deep sleep does not occur (1991). The article suggested that noise can affect leukocyte function and noise stress may alter the course of wound healing (1991). "The Environmental Protection Agency (EPA) has recommended that noise levels in hospitals should be less than 45 db. during

the day and below 35 db. during the night" (United States Environmental Protection Agency, 1974). In a study conducted by Redding, Hargest, and Minsky (as cited in McCarthy, Ouimet, and Dawn, 1991, p. 44) stated, "noise levels in an intensive care unit were 70 to 80 db. for equipment noise and 60 to 70 db. when three people spoke in the hallway." Finally, this article concluded that reduction of noise could greatly improve recovery rates. This article suggested it is the nurse's responsibility to maintain a healing environment. This can be done by promoting relaxation and limiting the amount of noise coming from telephones, radios, and conversations. This article is relevant to the nursing practice model because it demonstrates how noise can affect wound healing and how nurses can help create an environment for healing to happen.

McGonigal (1986) reviewed the physiology and function of sleep and discusses the effect of sleep on healthy individuals. The study by Koller (1969) explored sleep deprivation. Healthy individuals demonstrated a decrease in concentration, perception, and cognitive functioning. Further, hallucinations and behavioral changes occurred. In the hospital setting, several factors are recognized as sleep disturbing factors. The first is nursing interruptions. This included basic cares, assessments, and providing medical care to patient. The next factor was pain and anxiety and finally noise and lighting. In Fisher and Moxham article (as cited in McGonigal, 1986, p. 77) discussed the intensive care syndrome which was described as "the patient's recuperative prowess as energy is directed towards coping with stressors in the ICU, rather than the healing process" (1984). These stressors included: altered perception of the environment, disorders of sensation, sensory overload, sensory deprivation, and social isolations. These stressors can lead to ICU syndrome. Signs of ICU syndrome include: confusion and disorientation, combativeness/aggression, hallucinations, and paranoia and delusions. This article outlined many factors that could put a patient at risk of ICU syndrome. This article is relevant to the practice model and why the environment plays a crucial role in healing in an ICU.

The article by Evans and French (1995) discussed healing in the ICU environment through sleep promotion and minimizing the impact of sleep deprivation. The article described the stages of sleep and the healing properties of REM sleep. During REM sleep cerebral blood flow, systolic blood pressure, and oxygen consumption are increased. McGonigal (1986) and Oswald (1984) (as cited by Evans & French, 1995, p. 192) stated, "REM sleep facilitates the growth and repair of brain tissues and emotional healing." Moreover, the article explored sleep deprivation and sleep fragmentation. Deprivation affected quality and consistency of sleep and fragmentation occurred when patients are not able to achieve a 90-minute sleep cycle uninterrupted. The article suggested 90 minute intervals of sleep may be more beneficial to patients instead of 8 hour blocks of sleep that occur at night. It is sometimes hard to allow for long periods of sleep in a critically ill patient so the patient may benefit from morning or afternoon naps. Finally, the article reviewed environmental factors that contribute to sleep deprivation, which included noise and lighting. This article explored why it may be important to implement quiet hours in an ICU environment.

Gaps in Nursing Knowledge

The literature review validated that sleep deprivation does occur in the ICU and there are definite gaps in nursing knowledge. None of the articles described ways to create an environment conducive to healing. Many articles described stressors that increased potential for sleep deprivation but did not suggest ways to promote sleep in the ICU or different techniques nurses can use to promote sleep.

Summary

The literature demonstrated the importance of sleep for patients in an intensive care unit, and supported the development of a practice model that promotes sleep and rest. Such a model is important to nursing practice and patient care, as implementing quiet hours in an ICU has the

potential to impact and promote patient healing. Finally, the literature review discussed Florence Nightingale's Environmental Model of Nursing, which supports careful attention to the environment as a key component of healing. Intensive care units are indeed not very conducive to sleep and rest. Chapter three will present a model that promotes sleep in the ICU and will use Florence Nightingale's (1992) thirteen canons central to her Environmental Model of Nursing.

Chapter Three

Development of the Practice Model

The following practice model illustrates nursing interventions that facilitate a healing environment based on Nightingale's (1992) Environmental Model of Nursing and her thirteen canons. An ICU is full of noise, lights, and action 24-hours a day. The model shows this typical ICU setting and the nurse's role in creating a healing environment for patients.

Figure 3.1 Creation of a Healing Environment Model

Description of Practice Model

The practice model depicts the current ICU environment composed of toxic elements, which include: noise, stimulation, lighting, and sleep deprivation and are harmful to the patient. The sun represents lighting, the clouds and thunder represent noise, the raindrops represent stimulation, and the lightning represents sleep deprivation these elements can create an environment not conducive for sleep as shown in Figure 3.1. In the middle of the model a shade

is closed to block out the current negative atmosphere, which is symbolized by Nightingale's thirteen canons, which will be implemented by nurses in the ICU. By closing this shade a new environment is created, which is conducive to healing and sleep. This new environment has the moon at the center of the model, which symbolizes a healing environment. Surrounding the moon are the stars that symbolize the major concepts of the model and include: promoting comfort, sleep, rest, quiet, and healing.

Process of Creating Model

This project is based on nurse theorist Florence Nightingale's (1992) thirteen canons central to the Environmental Model of Nursing. Nightingale (1992) wrote, "Unnecessary noise, or noise that creates an expectation in the mind, is that which hurts the patient" (p.25). Observation and participation in an ICU, as well as a literature review support this statement. It is clear that the environment plays an important role in patient healing and nurses can manipulate the environment create a healing environment.

Purpose of Model

The purpose of the model is to foster a healing environment for patients in the ICU of a large urban hospital by intentionally creating time and space for sleep and rest daily. Nurses are able to carry out activities and interventions consistent with Nightingale's thirteen canons to create this healing environment.

Major Concepts

The major concepts in the practice model include: promoting comfort, sleep, rest, quiet, and healing. These concepts are all intertwined and are integral to the creation of a healing environment. Enhancing patient comfort improves sleep, rest, and healing. A nurse can promote comfort through repositioning, assessing pain, and determining sleep patterns of a patient. The second concept is sleep. Sleep is crucial for healing. Often nurses prioritize patient assessment,

task completion, and documentation above patient sleep. Intentionally creating time and space for sleep daily may improve patient outcomes. The third concept of rest is directly linked to sleep. Promotion of rest could potentially lead to increased sleep time in patients. There are many ways a nurse can facilitate rest for the patient. Limiting stimulation, dimming lights, and communicating patient needs with visitors are some nurse interventions that help create a restful environment. The third concept is quiet. Minimizing noise from machines, staff, and families can help create a healing environment. Combining all of these concepts further enhances patient comfort, sleep, and healing. These concepts are all intertwined in Florence Nightingale's thirteen canons as described in chapter one.

Assumptions of the Model

First assumption is that patients in an ICU are sleep deprived. Second assumption is that patients admitted to the ICU, in addition to being critically ill, will be subjected to an environment that is irritating, toxic to health and healing, and causes sleep and rest deprivation. The third assumption of this model is that by decreasing the toxic elements that are currently in the ICU, through the nurse manipulating the environment, a healing environment can be created. The fourth assumption is that if patients sleep well they will be able to heal faster. The final assumption is that the nurse will be able to manipulate the environment effectively in order to create a time and space for rest.

Context of Model

This practice model will be implemented in a large urban hospital. The model will first be introduced in the ICU and could potentially be used in most hospital units. This model will focus on the nursing staff, as they are the key factor in creating a healing environment for the patient.

Implementation of Model

This practice model will sound simple to implement yet with all the complexity of care in the ICU it may be very difficult to carry out. First, the model must receive approval from the nursing leadership team on the unit including: the nurse manager, clinical nurse specialists, and nurse educators. Second, the model must be presented to the committees on the unit, which includes: the unit council, the unit practice team, continuous improvement team, and charge nurses. After approval from the leadership teams and committees, it must be decided when the rest/sleep hours would occur on the unit. This could be done in the afternoon hours between 1:00 p.m. to 2:30 p.m. or in the early morning hours between 2:00 a.m. to 3:30 a.m. After an established time has been approved the process could be implemented on the unit.

The implementation of the model will be a collaborative effort with nursing staff, patient care assistants, and ancillary staff on the unit. However, nursing staff will assume the primary role of creating this healing environment. It will be important to educate staff about sleep and healing in the ICU. Showing them the importance of a healing environment will create more buy in from staff and they will then be more willing to create this environment. During the beginning phases of implementation it will be important to remind staff about sleep/rest hours. This can happen during shift change huddle where charge nurses can remind staff about rest/sleep hours on the unit.

First, during this sleep/rest time nursing staff would limit unnecessary stimulation, which includes: routine x-rays, labs, repositioning, baths, suctioning etc. There may be times when the patient is in critical condition and this sleep/rest time may not appropriate this would be determined through nursing judgment. However, during these times it is important to remember the role sleep plays in patient healing. This is directly related to Nightingale's (1992) thirteen

canons specifically canons: 4. Noise, 9. Light, 10. Cleanliness of rooms and walls, 11. Personal cleanliness, and 13. Observation of the sick.

Second, it will be important to limit unnecessary noise. For instance, one could refrain from picking up trash and linens in patient rooms during rest time as this creates loud noises. Nursing staff must therefore remember to remind patient care assistants not to collect linens, trash, or stock patient rooms during this time. Furthermore, staff should close doors in patients' rooms to eliminate noise from telephones ringing, floor cleaning machines, and staff conversing outside of patient rooms. Relaxation music may be played in rooms to help create an environment conducive for sleep. It will be important to remind staff on the unit to talk softly during this time. It may be helpful to have a nurse or patient care assistant on the unit who acts as a sleep monitor. This person would have some type of object that designates them as a sleep monitor and they are to be mindful of unnecessary noise. For example, when they hear people talking loudly, they could show staff the object to remind them of their noise level. This sleep monitor object could be rotated to other staff members every half hour so more people are cognizant of the noise levels and everyone could have the opportunity to hear how loud a unit can be. This relates to Nightingale's (1992) canons: 4. Noise, 9. Light, 10. Cleanliness of rooms and walls, and 13. Observation of the sick.

Third, is to dim the lights in the patient rooms, hallways, and nursing station. If there are computer systems in the patient rooms turn the screen off or turn computer screen away from patient. Also, may be helpful to clothes shades to windows or clothes curtain half way to create a darker room. This relates to canons: 1. Ventilation and warming, 2. Health of houses, 3. Petty management, and 13. Observation of the sick (Nightingale, 1992).

Finally, it is important to let patients' family members know about the sleep/rest hours on the unit so they will be able to help in creating a healing environment for their loved one in the

ICU. Family members will then be able to let other relatives and friends know about this restful period and encourage people to visit during other hours. Moreover, this could be a time for family members to take a much-needed break and rest themselves. This relates to canons: 12. Chattering of hopes and advices and 13. Observation of the sick. As such, all of the activities interventions are consistent with Nightingale's (1992) thirteen canons.

Summary

This practice model demonstrates how important sleep/rest can be to a patient. I hope to achieve, through implementation of this model, an environment within an intensive care unit, which is conducive to healing. Through nursing interventions, modeled by Nightingale's thirteen canons, and staff buy in this environment could happen in the ICU. Chapter four will discuss and evaluate effectiveness of this practice model.

Chapter Four

Evaluation

This chapter outlines plans to evaluate the effectiveness of this practice model. There are several criteria that will need to be considered for evaluation of outcomes. The important and efficient way to evaluate effectiveness is through surveys. Surveys will be conducted with patients, families, patient care assistants/ancillary staff, and nursing staff. The surveys can be qualitative and quantitative and will be designed by nursing staff on the unit.

For patients, surveys can include questions that pertain to adequate sleep in the ICU. Did they feel noise levels were decreased during rest times? Was staff cognizant of unnecessary noise, lighting, stimulation etc. to help promote comfort and healing while in the ICU? Was their pain well controlled to help aid in rest, sleep, and healing? For families, surveys can discuss if they noticed a change in patient's disposition, level of alertness, cognitive abilities, or decrease in confusion etc. Also, if family members felt like during this time they were able to rest as well.

For nursing staff anonymous surveys would be conducted on effectiveness of the implementation of the model. Do they feel that quiet hours impeded their ability to perform tasks with patients? Important for nursing staff to tell what worked well and what didn't work so well. Do they feel creating a healing environment actually led to better outcomes for their patients? If this model were to be continued what could be done differently to improve effectiveness? Further, during implementation of quiet hours staff will keep record of how often they went into patient's rooms during rest hours. Also, keep record of how many times they actually went into patient rooms, why they needed to go into the room, and how many times going into room could have been avoided or done at a different time. Finally, did going into a patient room cause disruption to the patient.

Summary

Evaluation of this practice model is very important. Through completion of surveys by patients, families, nursing, and ancillary staff the researcher will be able to determine how effective the creation of the healing environment is on an intensive care unit. Data could be collected for up to a period of one year. With the information collected, on the surveys, changes could be made to improve the effectiveness of the model. Chapter five will discuss conclusions, recommendations, and reflections of the practice model.

Chapter Five

Discussion

Chapter five will discuss conclusions, recommendations, and reflections related to nursing practice and nursing research, implications to decrease health inequities, future practice, theory development, and future research. There potentially could be many implications for nursing practice and nursing leadership if this model is successful. If the model demonstrates effective patient and family healing this model could be instituted throughout all the ICU's in the hospital and may be able to expand to other hospitals throughout the Midwest. This is important to nurse leadership as well because these results can lead to *best practices*, which will create the best outcomes for our patients. Hopefully, through implementation of this model the health inequity of ineffective healing related to sleep deprivation will be greatly reduced in the ICU and patients will experience a restful, healing environment during their ICU stay.

This model and research related to the model could conceivably be expanded by looking at noise levels and by recording decibel levels on a unit, monitoring vital signs before, during and after restful times, and creating a holistic approach to ICU care. Future research would include using this model during other times or different shifts. Eventually if the model were implemented and it was determined that patients were not receiving adequate rest/sleep throughout the night changes could be implemented. Door cards could be used on patients' rooms during the implemented rest times to remind staff and families of the needed rest and creation of a healing environment for the patient during the two-hour period. For example, if a patient is awake for more than four hours during the night a door card could be placed on the patients' room to indicate they need healing time during that next day. Nurses could then really focus on creating that environment for the patient during rest times.

In the future, more research could be done on patients by monitoring their vital signs before and after rest periods. This would look at whether or not patients heart rate or blood pressure increased or decreased because rest time. This may involve many hours of research however, may add validity to the project by looking at quantitative data versus qualitative data. Moreover, the unit could look and see if there is a correlation between ICU stay times, intubation length, and if patient satisfaction is improved through creation of a healing environment.

This project provides many insights. Sleep and rest are vital components to health whether one is a nurse working in the ICU or a patient in the ICU. Intentional focus on Nightingale's (1992) theory and her thirteen canons can have a huge impact on patient care. As a result of working on this project, I am more aware of the amount of unnecessary noise, lighting, and stimulation that occurs 24/7 in my practice. I am mindful to remember that not only are these patients in my care very sick, these patients also need rest even if it can only happen in small amounts of time.

Modern day ICU's can be very stressful environments just as hospital stays were during the times of Florence Nightingale. As nurses, in addition to trying to alter a disease process within the body through the implementation of delegated medical functions there are also a number of nursing interventions that can be implemented to promote healing and diminish the power of disease. Manipulating the environment to optimize patient healing is one of the ways nurses have an impact on recovery of health. Through literature and focused study I have discovered how easy it is to ignore the toxic environment we create for our patients just by trying to help them. Even the simplest of noises can startle patients and create stimulation that has negative effects on a person's health and ability to heal. Although nurses cannot control the reasons for patients needing the ICU they can use Florence Nightingale's Environmental Model

of Nursing and her thirteen canons to control the physical environment within the ICU, making it more conducive to healing and recovery

References

Butts, J. B., & Rich, K. L. (Eds.). (2011). *Philosophies and theories for advanced nursing practice.* Sudbury, MA: Jones & Bartlett Learning.

Carroll, D. P. (Ed.). (1992). *Notes on Nursing.* Philadelphia, PA: J.B. Lippincott Company.

Dines-Kalinowski, C. M. (2002). "Nature's nurse: Promoting sleep in the ICU. *Dimensions of Critical Care Nursing, 21*(1), 32-34.

Evans, J. C., & French, D. G. (1995). Sleep and healing in intensive care settings. *Dimensions of Critical Care Nursing, 14*(4), 189-199.

Freedman, N. S., Gazendam, J., Levan, L., Pack, A. I., & Schwab, R. J. (2001). Abnormal sleep/wake cycles and the effect of environmental noise on sleep disruption in the intensive care unit. *American Journal of Respiratory and Critical Care Medicine, 163*(2), 451-457.

Fitzpatrick, J. (1992). *Reflections on Nightingale's perspective of nursing.* In D.P. Carroll (Ed). Notes on Nursing by Florence Nightingale (18-22). Philadelphia, PA: J.P. Lippincott Company.

Friese, R. S. (2008). Sleep and recovery from critical illness and injury: A review of theory, current practice, and future directions. *Critical Care Medicine, 36*(3), 697-705.

Honkus, V. L. (2003). Sleep deprivation in critical care units. *Critical Care Nursing Quarterly, 26*(3), 179-189.

McCarthy, D. O., Ouimet, M. E., & Daun, J. M. (1991). Shades of Florence Nightingale: Potential impact of noise stress on wound healing. *Holistic Nursing Practice, 5*(4), 39-48.

McGonigal, K. S. (1986). The importance of sleep and the sensory environment to critically ill patients. *Intensive Care Nursing, 2*(2), 73-82.

Nightingale, F. (1992). *Notes on nursing: What it is and what it is not* (Commemorative ed.). Philadelphia, PA: J.P. Lippincott Company.

Parker, K. P. (1995). Promoting sleep and rest in critically ill patients. *Critical Care Nursing Clinics of North America, 7*(2), 337-349.

Patel, M., Chipman, J., Carlin, B. W., & Shade, D. (2008). Sleep in the intensive care unit setting. *Critical Care Nursing Quarterly, 31*(4), 309-318.

Redding, J. S., Hargest, T. S., & Minsky, S. H. (1977). How noisy is intensive care? *Critical Care Medicine, 5*(275), .

Tembo, A. C., & Parker, V. (2009). Factors that impact on sleep in intensive care patients. *Intensive and Critical Care Nursing, 25*, 314-322.